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EXAMINER	
WONG, ERIC TAK WAI	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/777,312	CHARNLEY, JAMES ALLEN	
	Examiner	Art Unit	
	ERIC T. WONG	3693	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-17, in the reply filed on 1/23/2008 is acknowledged.

Claim Objections

2. Applicant is advised that should claim 5 be found allowable, claim 17 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

MPEP § 2106 reads as follows:

> A claimed invention is directed to a practical application of a 35 U.S.C. 101 judicial exception when it:
>
> (A) "transforms" an article or physical object to a different state or thing; or
> (B) otherwise produces a useful, concrete and tangible result, based on the factors discussed below.
>
> In determining whether a claim provides a practical application of a 35 U.S.C. 101 judicial exception that produces a useful, tangible, and concrete result, USPTO personnel should consider and weigh the following factors:
>
> a) "USEFUL RESULT"
> For an invention to be "useful" it must satisfy the utility requirement of section 101. The USPTO's official interpretation of the utility requirement provides that the utility of an invention has to be (i) specific, (ii) substantial and (iii) credible. MPEP § 2107 and Fisher, 421 F.3d at 1372, 76 USPQ2d at 1230 (citing the Utility Guidelines with approval for interpretation of "specific" and "substantial"). In

addition, when the examiner has reason to believe that the claim is not for a practical application that produces a useful result, the claim should be rejected, thus requiring the applicant to distinguish the claim from the three 35 U.S.C. 101 judicial exceptions to patentable subject matter by specifically reciting in the claim the practical application. In such cases, statements in the specification describing a practical application may not be sufficient to satisfy the requirements for section 101 with respect to the claimed invention. Likewise, a claim that can be read so broadly as to include statutory and nonstatutory subject matter must be amended to limit the claim to a practical application. In other words, if the specification discloses a practical application of a section 101 judicial exception, but the claim is broader than the disclosure such that it does not require a practical application, then the claim must be rejected.

b) "TANGIBLE RESULT"
The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a 35 U.S.C. 101 judicial exception, in that the process claim must set forth a practical application of that judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”). “[A]n application of a law of nature or mathematical formula to a … process may well be deserving of patent protection.” Diehr, 450 U.S. at 187, 209 USPQ at 8 (emphasis added); see also Corning, 56 U.S. (15 How.) at 268, 14 L.Ed. 683 (“It is for the discovery or invention of some practical method or means of producing a beneficial result or effect, that a patent is granted . . .”). In other words, the opposite meaning of “tangible” is “abstract.”

c) "CONCRETE RESULT"
Another consideration is whether the invention produces a “concrete” result. Usually, this question arises when a result cannot be assured. In other words, the process must have result that can be substantially repeatable or the process must substantially produce the same result again. In re Swartz, 232 F.3d 862, 864, 56 USPQ2d 1703, 1704 (Fed. Cir. 2000) (where asserted result produced by the claimed invention is “irreproducible” claim should be rejected under section 101). The opposite of “concrete” is unrepeatable or unpredictable. Resolving this question is dependent on the level of skill in the art. For example, if the claimed invention is for a process which requires a particular skill, to determine whether that process is substantially repeatable will necessarily require a determination of the level of skill of the ordinary artisan in that field. An appropriate rejection under 35 U.S.C. 101 should be accompanied by a lack of enablement rejection under 35 U.S.C. 112, paragraph 1, where the invention cannot operate as intended without undue experimentation.

3. Claims 1-17 rejected under 35 U.S.C. 101 because the claimed invention is not directed to a practical application of a judicial exception.

Since the claimed invention involves an abstract idea, ie. the manipulation of basic mathematical constructs, it must: a) involve a physical transformation or b) produce a useful,

tangible, and concrete result. The claimed invention performs no physical transformation, so a useful, tangible, and concrete result must be produced instead. The claimed invention fails the useful, tangible, and concrete test since no tangible result is produced.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-17 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 1 and 17 recite the limitation "the record" in the limitation “appending the class average of average returns for the asset class as calculated over the analysis time period to the record of each member of the class”. There is insufficient antecedent basis for this limitation in the claims.

6. Claims 1 and 17 recite the limitation "the dissimilarities" in the limitation “maximizing the dissimilarities of correlation with the average returns of the asset class between two groups created by the bisecting of the asset class population”. There is insufficient antecedent basis for this limitation in the claims. Examiner interprets the limitation as determining which assets have returns that are least correlated to the average returns of the asset class.

7. Claim 8 recites wherein the investment risk for each member of an asset class is standardized for each evaluation period and the step of bisecting the asset class population into two halves is determined according to the following formula: [standardized investment risk] = [constant{K}]. Examiner notes that it appears support for this limitation is found in paragraph

169 of the specification. However, it is still unclear as to how this equation bisects the asset class population into two halves.

8. Claims 2-7 and 9-16 are rejected by virtue of their dependence on claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-12, 14, and 16-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admission of prior art in view of Dunne (US PG-Pub No. 2005/0075962 A1), further in view of Sperandeo (US PG-Pub No. 2005/0114251 A1).

10. Regarding claim 1,

Applicant admission of prior art teaches providing a market benchmark and analysis time period for an evaluation and selection time period; verifying the adequacy of the market benchmark and analysis time period; defining members of an asset class as an asset class population; calculating the relative investment performance of the members of the asset class for each evaluation and selection period; bisecting the asset class population into two halves through a point of average class risk for each evaluation period (see FIG. 3A);

Applicant admission of prior art does not teach providing the analysis time period as a plurality of contiguous time periods.

Dunne teaches analyzing investments using a plurality of contiguous time periods (see paragraph 31). Therefore, it would have been obvious to one of ordinary skill in the art at the

time of invention to modify the providing a market benchmark and analysis time period of Applicant admission of prior art with providing the analysis time period as a plurality of contiguous time periods, as taught by Dunne. One skilled in the art would have been motivated to make the modification in order to permit historical performance data for investments to be analyzed in respect of every possible investment period using any pre-existing or personally defined quantitative performance measurement algorithm (see paragraph 24).

Applicant admission of prior art does not teach determining whether the investment performance of the bisections of asset class population formed in each evaluation period is cross-cyclical in each subsequent selection period; calculating a correlation coefficient between the pattern of asset class average returns and the pattern of group average investment performance for the population within each of the halves; maximizing the dissimilarities of correlation with the average returns of the asset class between two groups created by the bisecting of the asset class population; and appending the class average of average returns for the asset class as calculated over the analysis time period to the record of each member of the class.

Sperandeo teaches determining whether the investment performance of assets is cross-cyclical through a range of economic cycles (see [0019]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the bisecting the asset class population taught by Applicant admission of prior art with determining whether the investment performance of the bisections of asset class population formed in each evaluation period is cross-cyclical in each subsequent selection period. One skilled in the art would have been motivated to make the modification for the benefit of determining assets which have a reliable return regardless of economic cycle.

Sperandeo further teaches determining the correlation between the performance of an asset and the performance of the general debt and equity markets (see paragraphs 1-4). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the analysis taught by Applicant admission of prior art further with calculating a correlation coefficient between the pattern of asset class average returns and the pattern of group average investment performance for the population within each of the halves and, subsequently, maximizing the dissimilarities of correlation. One skilled in the art would have been motivated to make the modification for the benefit of determining assets which will have a reliable return throughout economic cycles.

11. Regarding claim 2,

Applicant admission of prior art teaches scaling a correlation coefficient (see paragraph 124). Examiner notes that the scaling is admittedly done by convention.

12. Regarding claim 3,

Applicant admission of prior art teaches calculating a market return for each member of an asset class (see paragraph 4).

13. Regarding claim 4,

Applicant admission of prior art teaches bisecting the asset class population into two halves is determined by the formula:

Dividing-line ret. = market-ret. – (([market-ret.]-[average-average ret.]) * constant{K})

Examiner notes that when constant{K}=0, the formula recreates the market-line, which is used to separate the asset class population (see prior art FIG.3.)

14. Regarding claim 5,

Applicant admission of prior art teaches providing a market benchmark and an analysis period made from a plurality of contiguous evaluation and selection time periods; providing sharper definition to the two halves of investment groups formed (R/G/Y1/Y2 coding convention); determining a class average for investment performance; indicating asset class populations whose evaluation-period investment performance relative to the class average is different; bisecting the asset class population into two halves for each evaluation time period (see FIG. 3); calculating the average standardized difference in investment performance relative to the class average for each half in each subsequent selection time period (see paragraph 9); selecting a division line to form the two halves that results in the greatest difference between the two halves in terms of size and consistency of their respective selection-period average standardized difference in investment performance relative to the class average (see paragraph 9); standardizing the investment risk for each member of an asset class for each evaluation period around their asset class average risk (see paragraph 9); calculating the average standardized difference in investment performance relative to the class average for each of the two halves for each selection period within the analysis period; and determining the strength of investment performance for each member of the asset class (see paragraph 9).

15. Regarding claim 6,

See discussion of claim 4.

16. Regarding claim 7,

Applicant admission of prior art teaches comparing the selection-period average for standardized difference in investment performance relative to the class average for each of the investment groups; and calculating the standard deviation of the standardized differential returns for each investment group around its average over the series of selection periods making up the analysis period.

17. Regarding claim 9,

Applicant admission of prior art teaches comparing standardized differential returns for each of the investment groups. Applicant admission of prior art further teaches calculating the standard deviation of the standardized differential returns for each investment group around its average (CAPM).

18. Regarding claim 10,

Applicant admission of prior art teaches separating populations of funds into four categories based on their average investment performance relative to their class peers, (G, R, Y1, and Y2).

19. Regarding claim 11,

Applicant admission of prior art teaches separating populations of funds into four categories based on their average investment performance relative to their class peers, (G, R, Y1, and Y2).

20. Regarding claim 12,

Applicant admission of prior art does not teach more than four contiguous sections.

Dunne teaches the more than four sections are contiguous (see paragraph 31). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the sectioning

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the more than four sections to be contiguous. One skilled in the art would have been motivated to make the modification in order to provide a consistent picture (see paragraph 179 of specification).

21. Regarding claim 14,

Applicant admission of prior art teaches separating populations of funds into four categories based on their average investment performance relative to their class peers, (G, R, Y1, and Y2).

It would have been obvious to modify Applicant admission of prior art with dividing the asset class population into sixteen sections. One skilled in the art would have been motivated to make the modification for the benefit of providing a more detailed categorization.

22. Regarding claim 16,

Applicant admission of prior art teaches calculating the average standardized difference in investment performance relative to the class average for each selection period in two sections; and combining into groups sections which have similar patterns of correlation, strength and consistency of average difference in investment performance relative to the class average over the course of the analysis period (G/R/Y1/Y2).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the calculating the difference in investment performance relative to the class average for

two sections with calculating the average standardized difference in investment performance relative to the class average for each of the more than four sections for each selection period within the analysis period. One skilled in the art would have been motivated to make the modification to identify groups with the best historic performance.

23. Regarding claim 17,

See discussion of claim 5.

24. Claims 13 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admission of prior art in view of Dunne, further in view of Sperandeo, further in view of Official Notice.

25. Regarding claim 13,

Dunne does not teach teaches the more than four sections are not contiguous (see paragraph 31).

Official Notice is taken that analysis of non-contiguous time periods was old and well known in the art at the time of invention (eg. random sample of time periods). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the more than four sections to be not contiguous. One skilled in the art would have been motivated to make the modification in order to reduce the number of calculations required for a larger time period.

26. Regarding claim 15,

Official Notice is taken that it would have been obvious to one of ordinary skill in the art to divide the 16 sections so that each section holds approximately 6.25 percent of the asset

class members since 1/16 = 6.25. One skilled in the art would have been motivated to make the modification for the benefit of having equal divisions.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC T. WONG whose telephone number is 571-270-3405. The examiner can normally be reached on Monday-Friday 9:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James A. Kramer can be reached on 571-272-6783. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James A. Kramer/
Supervisory Patent Examiner, Art Unit 3693

ERIC T. WONG
Examiner
Art Unit 3693

April 23, 2008